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Australian Military Forces

Infantry Training

Volume I

INFANTRY PLATOON WEAPONS

PAMPHLET No. 7

GRENADES

(All Arms)

1951

AUSTRALIAN SUPPLEMENT

Army Headquarters,
Melbourne,

1/6/53

Issued by Command of the Military Board
Amendments will be notified in Australian Army Orders

A handwritten signature in dark ink, appearing to read 'John A. L. ...', with a long horizontal flourish extending to the right.

Acting Secretary to the Board.

INFANTRY TRAINING

Volume I

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SUPPLEMENT

FOR USE WITH AUSTRALIAN EQUIPMENT

Foreword

When Australian equipment is used, the following additional lessons will be taught:—

Lesson 3A.—The discharger No. 1.

Lesson 3B.—Firing drill grenades.

Lesson 6A.—The 63 grenade.

Appendix A.—Training with live grenades.

Appendix B.—The demolition set.

LESSON 3A—THE DISCHARGER No. 1

A. INSTRUCTOR'S NOTES

Aim

1. To teach the use of the discharger for firing the 36 (rifle) grenade.

Stores

2. A discharger, fired ballistite cartridge, drill 36 grenade and gas check for the instructor and each man.

Instructional Knowledge

3. During training, it is advisable to have a partly filled sand-bag under the heel of the butt to avoid damage to the rifle when firing.

4. When firing a number of grenades from the discharger, it tends to work loose. It should, therefore, be examined regularly and adjusted if necessary. It is also necessary to cater for expansion of the barrel by adjustment of the adjusting screw. This is done by unscrewing it one full turn after it has been screwed into tight contact with the barrel.

5. Best results are obtained when firing in the kneeling position, but the firer's position must always conform to the cover available. Whichever position is adopted, a constant angle of 45 degrees between the rifle and the ground line must be maintained.

6. Suitable orders for drill are:—

"Rifle grenade," "(Range)," "Load," "Unload," etc.

B. CONDUCT OF THE LESSON

Preliminaries

7. Carry out the first safety precaution, and inspect ballistite cartridges to ensure that they have been fired.

Approach

8. Explain and demonstrate that the 36 grenade can be fired from the discharger when it is attached to the rifle, thus greatly increasing the range. Approximately 200 yards can be attained. A special cartridge is used, and the grenade itself differs from the hand grenade in that it has a seven-seconds fuze and a gas check.

Description of Discharger (see Fig. 1).

9. Explain that the barrel is cylindrical in shape and is threaded internally to receive the locking base. Near the lower end is a slot which forms the gas port. This is closed by a sliding shutter which can be clamped in position by a clamping nut. Variations in range are obtained by opening or closing the gas port by varying amounts. The locking base is threaded on

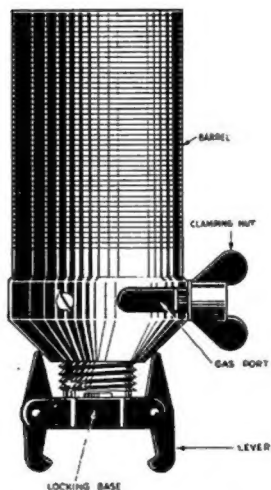


Fig. 1.—Discharger No. 1.

the outside to fit the barrel, and has a central hole threaded to receive the adjusting screw, the top of which is slotted to take the point of the bayonet. Below are two claw levers; these engage in the slotted sides of the nosecap of the rifle.

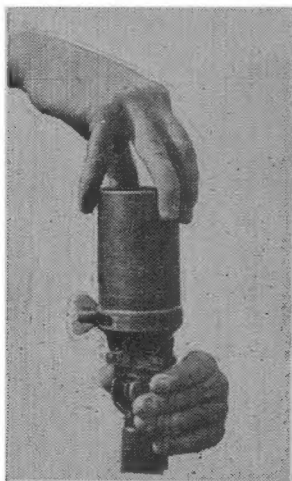


Fig. 2.—Fixing the discharger.

Fixing and Unfixing the Discharger (see Fig. 2)

10. Explain and demonstrate with squad imitating. Unscrew the locking base about three turns, and see that the adjusting screw is also screwed back about one-eighth inch within the face of the locking base. Place the discharger on the rifle nose-cap in such a way that the large recess in the locking base is towards the bayonet boss. With one hand, press the claw levers into the recesses in the nose-cap and, with the other, screw the barrel of the discharger tightly down into the locking base. Insert the point of a bayonet into the mouth of the barrel, engage it in the slots of the adjusting screw, and turn it in a clockwise direction until it is tight.

To unfix the discharger, unscrew it two or three turns, press inwards the upper ends of the claw levers, and raise the discharger off the nose-cap.

11. Practice squad in fixing and unfixing the discharger.

Range Setting

12. Explain and demonstrate that ranges are based on the rifle being held at an angle of 45 degrees with the *heel* of the butt on the ground. This angle is constant and must not be altered.

13. Explain and demonstrate with squad imitating that range is obtained by opening or closing the gas port as follows:—

80 yards . . .	Gas port fully open.
110 " . . .	" quarter closed.
140 " . . .	" half closed.
170 " . . .	" three-quarter closed.
200 " . . .	" fully closed.

These ranges are only approximate, and will be affected by head and rear winds. All measurements on the gas port must be taken from the inside edge of the shutter.

14. Question and practice squad in range setting.

Ballistite Cartridges

15. Explain that ballistite cartridges ONLY will be used when firing grenades. The cartridge is blackened for half its length to distinguish it from other cartridges. Show one to the squad.

The 36 (Rifle) Grenade

16. Explain and demonstrate with squad imitating. When firing the rifle grenade, the igniter set used has a seven-seconds fuze. The fuze is coloured yellow, and has no rubber band on it. It is necessary to fit a gas check to the base plate of the grenade, and it must be screwed on tight.

Loading and Unloading

17. Explain and demonstrate with squad imitating. Take up a position kneeling behind cover. Unload ball cartridges, and unfix bayonet if necessary. Load a ballistite cartridge and apply the safety catch. A grenade (with gas check attached) is then

placed inside the discharger, ensuring that the lever is contained within the barrel (see Fig. 3). The safety pin is withdrawn, and the grenade pushed fully home. The safety pin is retained on the firer's finger. Keep the rifle at a suitable angle to ensure that the grenade does not fall out.



Fig. 3.—Loading the 36 rifle grenade.

To unload. On occasions it may not be possible or desirable to fire a grenade once loaded, and it is necessary to make it safe and unload it. To do this, apply the safety catch, and draw the rifle back carefully. Pull the grenade sufficiently far from the discharger to allow the pin to be replaced. Remove the grenade, splay the pin on the discharger rim, and return the grenade to the pouch. Remove the discharger, return it to the pouch, unload the ballistite, and reload with ball ammunition. Only at short range and in emergency may ball ammunition be fired through the discharger.

18. Practice squad in loading and unloading.

Firing Position (see Fig. 4)

19. Explain and demonstrate with squad imitating (discharger loaded). The normal firing position is kneeling, but, if cover is low, the firer may have to adopt a sitting position. The rifle is held with the left hand just above the band, barrel downward and at a constant angle of 45 degrees. The right knee should be close against the left foot for support. The head is held well back to facilitate alignment of the rifle onto the target and to avoid flash from the gas port. With the exception of the forefinger, the right hand is clenched, and the forefinger is

extended across the trigger. The hands must be kept clear of all metal parts of the rifle when firing. Aim is taken by aligning the top edge of the discharger on to the target or auxiliary aiming mark. The rifle must be held firmly, and the trigger pressed with a firm downward movement of the forefinger.

20. Practise the squad in adopting the firing position, holding and firing.



Fig. 4.—The firing position.

Care and Maintenance

21. Explain and demonstrate with squad imitating. To clean the discharger after firing, unscrew the locking base and adjusting screw. Wipe the inside of the barrel and the shutter with a dry rag to remove fouling. Clean thoroughly with an oily rag, dry off, and then oil again. Clean the locking base and adjusting screw in the same manner, paying particular attention to the threads. Assemble the discharger. It will require daily attention for a week after firing.

22. Practise squad in cleaning after firing.

Conclusion

23. Questions to and from the squad.

24. Final practice of weak points.

25. Sum up.

Test of Elementary Training

The 36 Grenade. Firing.

1. Conditions.—The firer will be in position behind cover, kneeling. A circle with diameter of 40 feet, and a suitable

aiming mark in the centre will be marked out at a range of 150 yards. The firer will fire five grenades.

2. Standard.—At least three grenades to fall within the circle.

LESSON 3B—FIRING DRILL 36 (RIFLE) GRENADES

A. INSTRUCTOR'S NOTES

Aim

1. To give practice in firing rifle grenades as a lead up to firing live grenades. This is an instructional lesson, and allows faults in handling to be corrected.

Stores

2. Two EY rifles with dischargers attached for each firing point; screens to represent cover; two drill grenades (less striker lever, striker and spring) for each man; ballistite cartridges, ground sheets, red flags and filled sandbags. Steel helmets will be worn.

Preparations

3. The live firing range should not be used for drill grenade firing. The ground selected should be soft to avoid breakages, and free from long grass to facilitate recovery of grenades. An area 250 yards long and 100 yards wide (measured from the firing point) should be clearly marked off with red danger flags.

4. A circular area 40 feet in diameter (at 150 yards, other ranges in proportion) should be marked as a target. This represents the beaten zone of a series of well-fired grenades.

5. The firing point should provide low cover. If natural cover is not available, screens should be erected.

6. The practice should be conducted by an officer with a N.C.O. acting as coach at each firing point.

7. Recovery of grenades will only be carried out under the orders of the conducting officer.

B. CONDUCT OF THE LESSON

Preliminaries

8. Normal safety precautions and stores layout.

Approach

9. Explain that the lesson is a lead up to firing live grenades by giving men practice and the opportunity to eliminate faults in handling.

Procedure

10. Explain that range discipline is similar to that for the rifle range. Particular attention will be paid to the following points:—

- (a) Only the N.C.O. and firing detail will be at the firing point.
- (b) No man will fire without a direct order.
- (c) Recovery of grenades will only take place on the order of the conducting officer.

11. Point out target areas, and divide men into details. The first detail will go to the firing point, the second will wait five yards in rear, and the remainder of the details ten yards in rear.

12. When a detail arrives at the firing point, the N.C.O. acting as coach will:—

- (a) Explain that errors in direction may be due to two causes (apart from the effect of wind):—
 - (i) Faulty alignment, causing grenades to fall to the left.
 - (ii) Flinching, causing grenades to fall to the right.
 - (b) Discuss with firers the range to the target and any allowance for wind.
 - (c) Supervise the firing of grenades as ordered by the controlling officer, and discuss results and corrections to range and direction with the firers.
13. Orders given by controlling officer during the practice are:

Order	Action
"Grenade.—Load."	Firer loads and sets gas port supervised by N.C.O.
"No. 1.—Fire."	N.C.O. checks position of No. 1 firer and gives order to fire first grenade.
"No. 2.—Fire." etc.	"
"No. 1.—Fire."	No. 1 fires his second grenade.
"No. 2.—"Fire," etc.	No. 2 " " " "
"Unload."	N.C.O. supervises.
"Details—change."	Normal range procedure.

14. At an appropriate time, the conducting officer will send coaches and firers to the target area to recover grenades and return them to the firing point.

Conclusion

- 15. Questions to and from squad.
- 16. Sum up main points of lesson.
- 17. Give conditions of T.O.E.T.
- 18. Inspection of pouches.

P.W.T.3

(For P.W.T.'s 1 and 2 see pages 51 and 52 of Pam. 7)

FIRING GRENADES, LESSONS 3A and 3B

Stores: E.Y. rifles, dischargers, drill 36 grenades, drill ballistite cartridges, live ballistite cartridges, red flags.

Time in mins.	Phase	Notes for Instructors
0 to +2	Preliminaries and re- vision.	To include safety precau- cautions.
to +5	Remind the squad of: (a) Use of discharger. (b) Method of fixing to rifle. (c) Range setting.	
to +15	Practice: Fixing and unfixing discharger. Loading. Firing position. Unloading.	Drill ballistite cartridges used. Point out area and target, and allow men to select own firing position, which should be behind low cover. Men not being exer- cised, watch and be pre- pared to criticise others.
to +40	Competition: Use of ground com- bined with firing drill grenades. Teams of two or three.	Enemy position represented by 40 ft. circle with central aiming mark at range of 100-170 yards. Each man issued with two grenades and two live ballistite, then move to covered position, estimate range, and fire grenades. Points awarded for accuracy—deducted for bad handling and incorrect use of ground. Instructor to supervise safety. Re- cover grenades when all fired.
to +45	Summary.	Announce winning team. Summarize main points noticed during period.

LESSON 6A.—THE 63 (SMOKE) GRENADE

A. INSTRUCTOR'S NOTES

Aim

1. To teach recognition and use of the 63 grenade.

Stores

2. Rifle, discharger, fired ballistite cartridge and fired 63 grenade for each man. Blackboard and chalk.

Instructional Knowledge

3. Ranges obtained with the 63 grenade are similar to those with the 36 (rifle) grenade.
4. The employment of smoke and the method of building up a smoke screen are dealt with in Pamphlet No. 8—2-inch Mortar, Lesson 5.

B. CONDUCT OF THE LESSON

Preliminaries

5. Normal safety precautions for rifle training will be carried out. There is no safety precaution for the 63 grenade.

Revision

6. Practice squad in fixing and unfixing the discharger and setting ranges on the gas port. Leave rifles with discharger fixed.

Approach

7. Explain that the 63 grenade provides the rifle section with a means of producing a quick, local screen at ranges longer than those possible with the 80 grenade.

Description (see Fig. 5)

8. Explain and demonstrate that the grenade is coloured green and is cylindrical in shape. The body is filled with a smoke composition and is primed at one end. This end is covered by a removable cap. The priming includes a delay pellet which delays ignition of the smoke composition for about five seconds after firing, during which time the grenade is in flight.

Action on Firing

9. Explain that when the rifle is fired, the flash from the ballistite cartridge penetrates the tinned-plate sealing discs and ignites the quickmatch primer. This in turn ignites the delay pellet, the slow burning of which delays the ignition of the smoke composition until the latter part of the grenade's flight. On falling to the ground the grenade gives off dense, white smoke for a period of approximately one minute.

10. Question squad on description and action on firing.

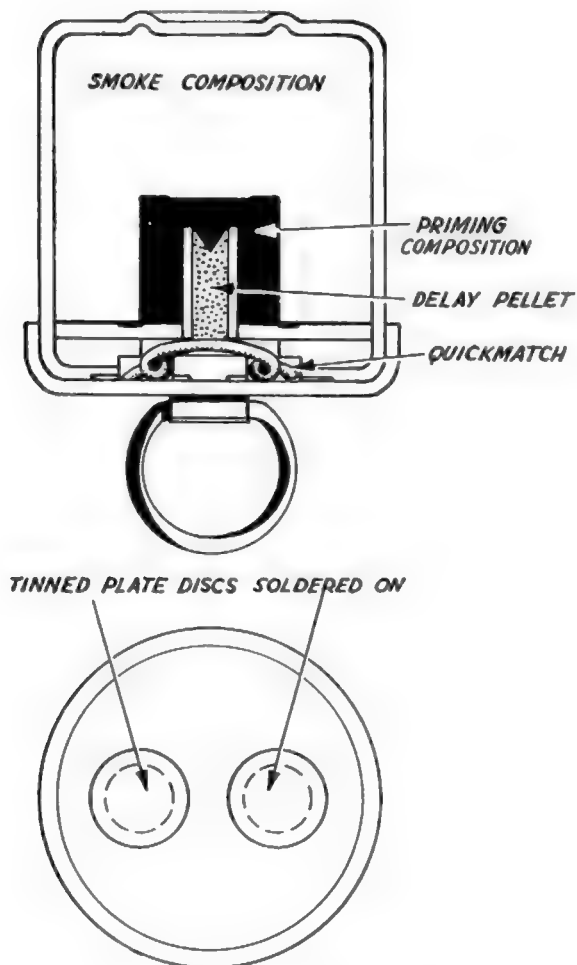


Fig. 5.—The 63 grenade.

Loading and Unloading

11. Explain and demonstrate with squad imitating that, to load the grenade, hold it base downwards. The top of the grenade is marked "TOP" and has a circular corrugation. Pull off the

cap by means of the loop and insert the grenade in the discharger base first. Put the cap in a convenient place. To unload the grenade, lower the discharger, let the grenade slide out, and replace the cap.

12. Practice squad in loading and unloading.

Firing

13. Explain that actions are the same as taught in LESSON 3A for the 36 (Rifle) grenade.

Employment

14. Explain briefly on the blackboard principles of the employment of smoke on a small scale and the method of producing a smoke screen for a rifle section with 63 grenades. LESSON 5 of Pamphlet No. 8—2-inch Mortar contains all necessary detail.

15. Question the squad and give problems on wind effect.

Conclusion

16. Questions to and from the squad.

17. Practice main points of lesson.

18. Sum up.

APPENDIX A

TRAINING WITH LIVE GRENADES

Note.—This appendix applies to Grenade Training in Australia, and replaces Appendix D of Pam. 7.

General

1. This appendix deals with training in the use of live grenades, the necessary range areas, safety precautions to be observed, the procedure for conducting live practices and the destruction of blinds.

2. Live practices should be conducted by an officer who has qualified at The School of Infantry or at a Command School on a course in which the grenades to be used were included in the syllabus. Where a qualified officer is not available, a warrant officer with the above course qualification may act instead. Conducting officers must be conversant with the relevant provisions of MBI 88/48 (General Instructions Regarding Ammunition).

3. N.C.O.'s assisting the conducting officer should also have the above qualification or have been trained by someone who has qualified in the manner described. In this case his commanding officer must be fully satisfied that he is competent to carry out the necessary duties.

4. Although the use of grenades can be taught by employing drill material only, the soldier's training cannot be considered complete until he has thrown and fired live grenades. Live

practices give the soldier confidence in handling a weapon which is, quite mistakenly, sometimes supposed to be dangerous to the user.

5. Accidents with grenades can generally be traced to one of four main causes—

- Ignorance.
- Negligence.
- Deliberate mishandling.
- Fright.

The first three can be overcome by training and supervision, and the last can be mastered by live practice. Every man should throw and fire a minimum of two grenades of each type; the more live grenades men throw and fire, the more confident and skilful will they become.

Live Bombing Ranges

6. Details of ranges given below should be regarded as a guide only, as their main application is to the training of recruits at well equipped training establishments. When exercising trained soldiers, elaborately constructed ranges will seldom be available nor are they suitable for advanced training. Realistic practices should be framed to bring out battle conditions provided that officers conducting training take reasonable safety precautions. These practices should include throwing and firing from natural positions which might be used in the field, e.g., folds in the ground, from fire trenches, etc.

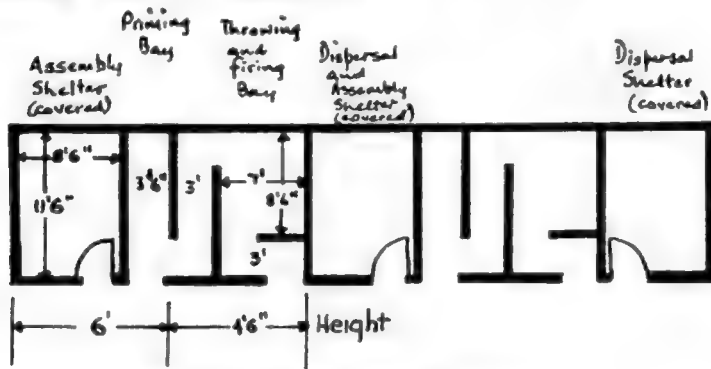


Fig. 6.—The live bombing emplacement.

7. 36 Grenade:

The plan of suitable live throwing trenches or breastworks is shown in Fig. 6. This is also suitable for firing the 36 grenade from the discharger if a rest for the butt is provided. If this type of range is not available, units can construct a simple form of trench as shown in Fig. 7.

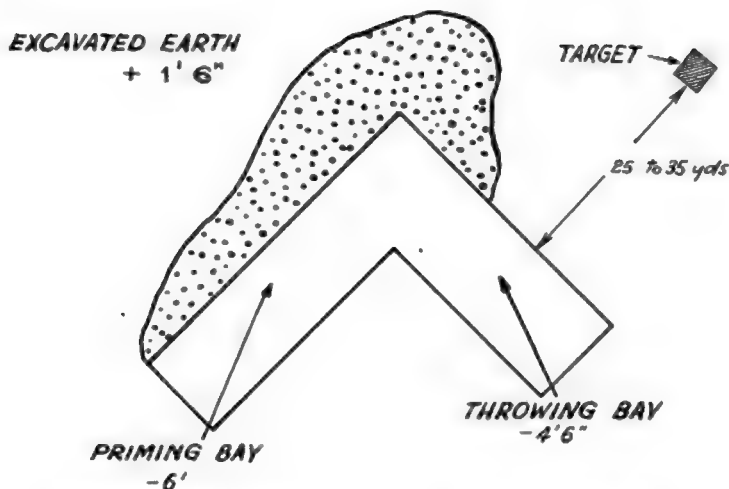


Fig. 7.—Simple form of priming and throwing bay.

The danger area must be clearly marked out by red danger flags and lookout men posted when the range is in use. A minimum distance of 300 yards must be allowed in all directions from the point where the grenades will burst (see Fig. 8).

Small rings of earth or circles of sandbags representing shell holes form suitable targets, and should be provided for each throwing bay. Shell holes must NOT be dug down owing to the difficulties of destroying blinds therein.

8. 75 Grenades:

At demonstrations, etc., where the effect of this grenade is shown, spectators should be at least 200 yards from the point of burst.

9. 82 Grenades:

No special range is required and no defined danger area can be laid down owing to the variation in the amount of explosive which may be placed in the bag. However, as a minimum, 100 yards all round the point of burst should be kept clear, and cover provided for the thrower and instructor.

10. Other types:

No special range is required, and it is only necessary for common-sense danger areas to be maintained. For example, the 80 grenade will scatter burning particles of phosphorus over an area of 20 yards (or more, depending on the wind) round the point of burst, and gas from the 92 grenade will affect personnel 200 yards down wind from the point of burst.

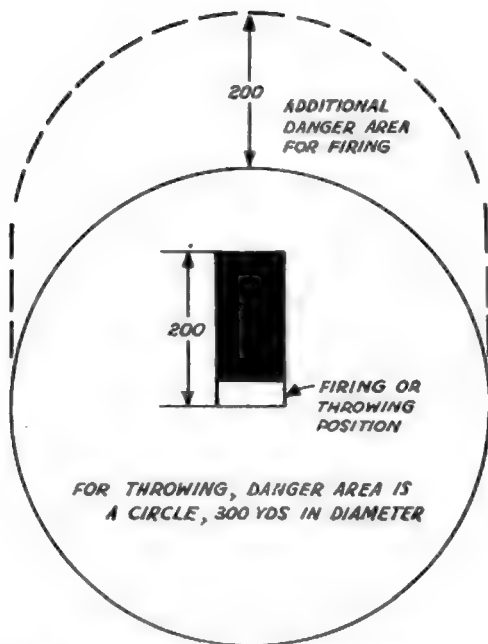


Fig. 8.—Danger area for 36 grenade range.

Safety Precautions

11. A qualified officer (*see* para. 2, page 13) will control the practice. Range reconnaissance by the officer prior to the practice is essential as some ranges have local rules.

12. A medical orderly with first aid appliances should be in attendance. If a medical orderly is not available, a first aid box must be provided and kept in the control post. In any case, the unit medical officer will be informed that live bombing will be conducted.

13. A demolition box must always be taken to the range.

14. A red danger flag will be kept at the control post during practice. This will be lowered as a signal that practice is about to begin, the conducting officer having first satisfied himself that danger flags and lookout men, as necessary, are in position, and that the range is clear of persons and livestock.

15. Every person on the range must wear a steel helmet.

16. Smoking is forbidden on the range at all times and off it when live grenades, detonators, etc., are being handled or carried.

17. To eliminate any possibility of prematures, all rules laid down for the inspection and preparation of grenades, igniter sets, never be inspected together; the inspection of grenades will be etc., will be strictly adhered to. Grenades and igniter sets will be carried out first, and they will then be replaced in their boxes. The inspection of igniter sets will follow.

18. No grenade will be primed until the man enters the priming bay or post preparatory to throwing or firing. To ensure that this rule is obeyed, the box containing the igniter sets will be in possession of the N.C.O. on duty in the priming bay. He will issue the number required to each man as he enters the priming bay, and will personally supervise the operation of priming.

19. Should a primed grenade not be thrown or fired, the igniter set will be removed and returned to its box. On no account will primed grenades be returned to store.

20. A trained N.C.O. (*see* para. 3, page 13) will be on duty in each priming and throwing bay or post.

21. No more than one person in addition to the N.C.O. on duty will be in any priming, throwing or firing bay at any time.

22. Everyone, except the conducting officer, N.C.O.'s on duty in priming, throwing or firing bays and the men actually priming, throwing or firing, will be under cover or out of the danger area.

23. No grenades will be loaded, and no man will fire or throw without the direct order of the conducting officer.

24. Any order to take cover must be instantly obeyed.

25. Every blind will be located and destroyed before another grenade is thrown or fired.

26. It is the duty of the officer conducting live practices to foresee possible incidents that may occur through nervousness or failure of material used and which may endanger those taking part. He must instruct his N.C.O.'s and men in the immediate action to be taken. For example, should a 36 grenade be dropped in a bay in the act of throwing or firing, the N.C.O. must immediately force the man behind cover round the traverse before taking cover himself. When firing the 36 grenade, should it drop back into the discharger owing to a very defective ballistite cartridge, the whole rifle and grenade must be thrown out of the bay.

Method of Conducting Live Practices

27. The procedure given below applies to the 36 grenade, but may be adapted for use with other types of grenades for which cover is required by the thrower.

28. *Organisation before practice begins:*

- (a) The conducting officer and his N.C.O.'s should demonstrate what is to be done during the practice; stones may be used to represent grenades. This should make for smoother running of the practice, avoidance of incidents, and the saving of time.

- (b) Troops taking part will be told off into details depending on the number of throwing or firing bays available. They will then be issued with the number of grenades they are to throw or fire, and move into shelters or outside the danger area.
- (c) Supervising N.C.O.'s will then take their places in the priming and throwing bays. Those detailed for priming bays will have with them the necessary number of igniter sets in boxes.
- (d) The conducting officer will take his place at the control post, taking with him the demolition box and any spare grenades. Having satisfied himself that all safety regulations have been complied with, he will lower the control post flag and order the first detail into the priming bays.
- (e) The first detail will then prime their grenades and pass on to the throwing bays. The second detail will at once take the place of the first in the priming Bays.
- (f) Should the practice be cancelled for any reason before the number of primed grenades has been used, N.C.O.'s in the priming and throwing bays will ensure that unused grenades are unprimed. This rule does not apply to temporary stopping of a practice due to a blind.

29. *Procedure for practice:*

When throwing or firing are being carried out, the following procedure will be used:—

- | | |
|--|--|
| (a) <i>Orders given by
Conducting officer:</i> | <i>Action taken by supervising N.C.O.'s
and throwers</i> |
| “No. 1—Ready.” | No. 1 adopts the “Ready” position. The N.C.O. will hold up his hand as a signal to the officer that this has been done. |
| “No. 1—Throw.” | No. 1 prepares the grenade for throwing, throws, observes the flight of the grenade, and, when ordered by the conducting officer, takes cover. |
| “No. 2—Ready.” | As above. |
| “No. 2—Throw.” | ” ” |
- (b) If there are more than two bays, the procedure will be the same until all have thrown one grenade. No. 1 will then be ordered to throw his second grenade, and the same sequence followed until all grenades have been thrown by the first detail.
 - (c) After ordering “No.....Throw,” the conducting officer will observe the actions of the thrower, the flight of the grenade, and order “Down.” He will then take cover himself.

- (d) When firing live grenades the same procedure will be used, but words of command will be as follows:—

"No. 1—Load."	No. 1 loads ballistite and then loads grenade.
"No. 1—Prepare to fire."	No. 1 aims.
"No. 1—Fire."	No. 1 fires grenade, observes flight, and, when ordered, takes cover.

- (e) As soon as the first detail has thrown or fired its grenades, the conducting officer will order "Details—Change." The first detail moves to the shelters, the second detail moves from the priming bays into the throwing bays, and the third detail from the shelters into the priming bays.

Action When a Blind Occurs

30. Should a grenade fail to explode when thrown or fired, everyone will remain under cover until further orders. The conducting officer will then proceed **ALONE** to destroy the grenade *where it lies*.

31. In the case of the 36 grenade, an interval of five minutes will ensue before the officer goes out for this purpose. With other types, no interval is necessary.

32. Having located the blind, the conducting officer will prepare a demolition set (*see Appendix B*) and place it in position. Care must be taken **NOT TO DISTURB THE GRENADE**; the steel helmet and any other equipment must therefore be securely fastened on. In the case of striker



Fig. 9.—The demolition set in position.

lever group grenades, the set must be so placed that it is in contact with the grenade. It is advisable to place a stone against the openside of the primer to prevent it moving while the fuze is burning (see Fig. 9). In the case of 247 fuze grenades, particular care must be exercised to ensure that the blind is not moved in any way. When placing the demolition set in position, a slight gap is permissible.

33. The conducting officer will make sure that all persons are under cover, and will then light the fuze and take cover himself. After the explosion he will examine the place to ensure that the blind has been destroyed. It is vital that all blinds are dealt with when they occur and NOT left until the end of the practice.

34. Causes of blinds:

In most instances, it is possible for the conducting officer to deduce the cause of a blind from the moment it is thrown or fired. With the 36 grenade, for example, failure to explode may lie in one or more of the following faults:—

<i>Fault</i>	<i>Observation by conducting officer:</i>	<i>Reason</i>
Failure of lever.	Lever does not fly off.	Pin NOT withdrawn or lever jammed (faulty preparation).
Failure of striker mechanism.	No sound of striker on cap.	Faulty preparation.
Fuze NOT burning.	NO smoke from grenade in air or on ground.	Faulty fuze or cap.
Failure of detonator.	No sound of explosion.	Faulty storage or manufacture.

Correct preparation will obviate most of the above faults.

35. Recording and reporting of defects and failures:—

The attention of all officers conducting live practices is directed to MBI 88/48. It must be clearly understood, however, that the blind will on no account be touched but will invariably be destroyed where it lies.

APPENDIX B

THE DEMOLITION SET (For Instructors Only.)

General

1. This appendix should be read in conjunction with Appendix D—Training with Live Grenades.

2. Should a grenade, when thrown or fired, fail to explode, it is called a blind. During training, blinds must be destroyed where

they lie before any more throwing or firing takes place. For this purpose, a demolition set consisting of a length of fuze, a detonator and a guncotton primer is prepared.

3. Demolition sets should be assembled and used by qualified officers, warrant officers and N.C.O.'s only. A qualified officer, etc., is one who has received a qualification to destroy blind grenades at a Small Arms Course (6 weeks) at the School of Infantry, or is otherwise qualified as in MBI 88/48 (Part I, paragraphs 18 and 19).

Stores

4. The stores required should be carried in a demolition box which can be made by unit labour (*see* Fig. 10). The following items are required:—



Fig. 10.—The demolition box.

Tin of Safety fuze (No. 11 or "Blue Sump").

Box of detonators (No. 6 Mk. 1 or No. 27).

Cylinder of 1-oz. primers (Guncotton or CE).

Rectifier.

Pair of pliers.

Box of fuzes.

A sharp knife or razor blade.

5. For training purposes, detonators and primers will consist of drill material. The drill detonator has a hole pierced in it.

6. Fuzes:

There are two types of burning fuze, safety fuze (coloured black or blue) and instantaneous (coloured orange). Instantaneous

fuze must *never* be used for the destruction of blinds. It can be identified by the fact that, apart from the colour, it cannot be inserted into a detonator without pulling back the outer orange-coloured tape. Safety fuze is coloured black (No. 11 Mk. 1) or blue ("Blue Sump") and issued in sealed tins containing two coils of 24 feet. Through the centre of the fuze runs a trail of gunpowder which burns at the rate of about two feet per minute (one inch in $2\frac{1}{2}$ seconds). The cover is waterproof, but the powder core is quickly spoiled by damp, and the tin must always be kept sealed. As an additional precaution, six inches should always be cut off from the end of the coil and discarded each time the tin is reopened for use. The fuze should be unrolled and not forcibly straightened as this causes kinks which may break the powder trail.

7. *Detonators:*

These are small unpainted aluminium tubes containing a small quantity of very sensitive high explosive. Detonators must be handled very carefully, and must not be struck, crushed, placed near heat or tampered with in any way. Damp affects the explosive, and they must be kept in sealed containers.

8. *Primers:*

Primers consist of one ounce of guncotton or CE. They are packed in metal or cardboard tubes, sometimes threaded on tape for easy removal. Each primer has a hole in its centre for reception of the detonator.

Assembling the Set

9. It is vital that the correct method of assembling the demolition set described below be strictly adhered to in all circumstances:—

- (a) Cut off a piece of safety fuze 12 inches long. (A foot rule should be painted on the lid of the demolition box.) Light this as described in para. 11 below, and time its rate of burning. If it takes less than 22 seconds to burn, do not use this particular coil of fuze. **FAILURE TO TAKE THIS PRECAUTION WILL LEAD TO ACCIDENTS.**
- (b) Next, cut off the required amount of fuze for the set; two feet will give about one minute to get to cover, and it is advisable to never use less than this length. If no cover is available, the fuze must be of sufficient length to allow the officer to *walk* 250 yards before the set explodes the blind. Cut one end of the fuze squarely on a hard surface using a sharp knife or razor blade, taking care to make a clean cut. Cut the other end diagonally to expose as much of the core as possible.
- (c) Take a detonator from the tin, and empty any foreign matter out of it by tapping the open end gently on the thumb nail. **DO NOT POKE THE FILLING WITH ANYTHING HARD.** Insert the squared end of the fuze into the detonator, and push it gently but firmly as far as

it will go. **DO NOT EMPLOY A SCREWING ACTION.** Hold the safety fuze between the third finger and thumb, and crimp the detonator on to the fuze near the open end with a pair of pliers or the blade of a knife, holding the detonator in place while doing so. **NEVER CRIMP THE DETONATOR NEAR THE CLOSED END.**

- (d) Take a primer. Insert the detonator into the primer so that the closed end is just short of the far end of the hole. Wedge the detonator in place with a blade of grass. **DO NOT USE FORCE.** If a Mark 1 guncotton primer is being used, enlarge the hole with the rectifier until the detonator can be inserted without forcing. The demolition set is now assembled and ready for use (see Fig. 11).

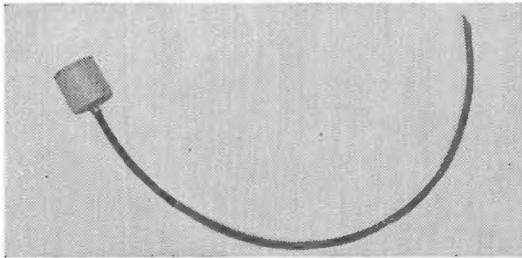


Fig. 11.—The assembled demolition set.

10. Do not take safety fuze, detonators or primers out of their tins until required for use. Replace covers on containers immediately after removing the required amounts.

11. To light the fuze using ordinary safety matches, hold the head of a match against the end cut on the slant so that the head is in contact with the gunpowder core. Rub the striking surface of the match box on the head of the match. The burst of flame in close contact with the powder causes it to ignite at once. When using fuze matches, strike the fuze and place it directly on the exposed gunpowder core.

Use of Demolition Set

12. This is described in detail in Appendix A, para. 32.

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